

REMARKS

Claims 1-13 are pending in this application. By this Amendment, independent claims 1 and 2-5 are amended, and new claims 12 and 13 are added. Support for the amendment to independent claim 1 can be found at least in Figs. 1a-1c, and the corresponding description. Claims 2-5 are amended for form. Support for claims 12 and 13 can be found at least in the subject matter of original claims 4 and 5. Thus, no new matter is added.

I. The Claims Define Patentable Subject Matter**A. §102(b) Rejection of Claim 1 over Yamada**

Claim 1 is rejected under 35 U.S.C. §102(a) over U.S. Patent No. 5,318,393 to Yamada (Yamada). The rejection is respectfully traversed.

Yamada does not teach or suggest every feature of independent claim 1. Yamada does not teach or suggest "the screw part includes a bevel lead having chamfers provided from the cutting edge along ridgelines between a crest face and a following flank of a thread, and between the crest face and a leading flank of the thread, width of each of the chamfers decreases with distance from the cutting edge," as recited in amended independent claim 1 (emphasis added).

As shown in Figs. 1a-1c, in the bevel lead 2a, the chamfers CF are provided from the cutting edge E along ridgeline R between a crest face 2e and a following flank 2c and between the crest face 2e and a leading flank 2d, wherein the width of each of the chamfers decrease with distance from the cutting edge (see Specification, paragraph [0015]). The chamfer reduces a load in a bevel lead, applied to a cutting edge corner part at which the cutting edge and the ridgeline mutually intersect and prevents creation of build-up edge therein, resulting in a stable shape of the cutting edge of the bevel lead. Further, during reverse rotation of the tap, the decreasing width of the chamfer CF prevents chips, that were generated from previous cutting process, from being pinched into a gap between the chamfer

CF of the bevel lead and a female screw formed by the tap, resulting in prevention of braking of the tap.

Yamada does not disclose the chamfer of bevel lead as recited in claim 1. Yamada merely discloses a relief that is formed either on the lower part or upper part of a flank (see Yamada, column 2, lines 8-15). When the relief is located on the lower part of a flank, the relief is not located along ridgeline, as recited in claim 1 (see Yamada, Figs. 1-2). Further, when the relief is located on the upper part of a flank, the relief is only located in the complete thread part, not the "bevel lead" part, as recited in claim 1 (see Yamada, Figs. 1-2). Because the relief is not formed in the bevel lead but in the complete thread part, the relief cannot reduce a load applied to a cutting edge corner part in the bevel lead, while preventing chips, that were generated from previous cutting, from being pinched into a gap between the relief and a female screw formed by the tap, during reverse rotation. Thus, Yamada does not teach or suggest the "chamfers" recited in claim 1.

Thus, for at least these reasons, independent claim 1 is patentable over Yamada. Withdrawal of the rejection is thus respectfully requested.

B. §103(a) Rejection of Claims 2-11 over Yamada in view of Henderer

Claims 2-11 are rejected under 35 U.S.C. §103(a) over Yamada in view of U.S. Patent No. 7,147,413 to Henderer et al. (Henderer). The rejection is respectfully traversed.

Yamada and Henderer, alone or in permissible combination, do not teach or suggest every feature of claims 2-11. As discussed above, Yamada does not teach or suggest "chamfers" as recited in independent claim 1. Henderer does not remedy the deficiency discussed above with respect to Yamada. Henderer is recited by the Office Action for only its alleged teaching of "hardened steel." Claims 2-11 depend from independent claim 1. Thus, claims 2-11 are patentable over Yamada and Henderer for at least the reasons discussed above

with respect to claim 1, as well as for additional features they recite. Withdrawal of the rejection is thus respectfully requested.

II. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:

Petition for Extension of Time

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